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**FEDERAL COMMUNICATIONS COMMISSION
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**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)
)
Preparation for International) IC Docket No. 94-31
Telecommunications Union World)
Radiocommunication Conference)

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COMMENTS OF COMSAT WORLD SYSTEMS

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Summary

CWS believes that the priority issues for the United States at WRC-95 will be those concerned with Mobile Satellite Service (MSS). We are in general agreement with the Preliminary FCC Draft Proposal contained in Appendix 1 to the Second Notice, as it relates to matters impacting the Fixed Satellite Service (FSS). CWS supports the Commission's decision not to include the band 13.75 -14.0 GHz in the FCC Draft Proposal as a feeder link band. We discuss the application of RR 2613 and also raise concern about the amount of spectrum at 20/30 GHz now available to GSO FSS that could be lost to feeder links and other services. We also recommend that the Commission give continued attention as to how the VGE Report should be presented and dealt with at the Conference. Developing the strategy of the best means of dealing with the volume and complexities of the Simplified Radio Regulations may prove critical. CWS also provides comments on the preliminary agendas for WRC-97 and WRC-99; and the Commission's preparatory processes. We conclude that the comments made in response to the Second Notice should be extremely useful in formulating the U.S. proposals to the 1995 WRC.

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COMMENTS OF COMSAT WORLD SYSTEMS

COMSAT Corporation, by its COMSAT World Systems business unit (CWS), herein submits its Comments on the Federal Communications Commission's Second Notice of Inquiry (Second Notice) in the above-captioned proceeding related to preparations for the 1995 ITU World Radiocommunication Conference (WRC-95).

Introduction

The International Telecommunication Union (ITU) will convene WRC-95 at its headquarters in Geneva, Switzerland from October 23 to November 17, 1995 to consider the substantive agenda that was developed at WRC-93 and adopted by the ITU Council at its May 1994 Session. CWS filed Comments and Reply Comments in this proceeding on July 15, 1994, and August 5, 1994, respectively. We welcome the opportunity presented by the Second Notice to provide additional comments on the issues of major importance to CWS that will be considered at WRC-95.

In our view, the priority issues for the United States at WRC-95 will be those concerned with Mobile Satellite Service (MSS). Specifically, we believe that those actions needed to be taken at WRC-95 to make the MSS allocations adopted at WARC-92 usable at the earliest possible date, are of critical importance to the U.S. satellite

industry and to the application of emerging satellite technologies for personal telecommunication services on a global scale.¹

CWS is in general agreement with the Preliminary FCC Draft Proposal contained in Appendix 1 to the Second Notice, as it relates to matters impacting the Fixed Satellite Service (FSS). We comment herein on the following specific issues: suppression of Resolution No. 112 (WARC-92), since necessary studies called for in Resolution 112 have been conducted and recommendations have been approved for the use of the 13.75 - 14 GHz band newly allocated at WARC-92 to the FSS on a primary basis; feeder link bands for MSS using certain FSS bands and related Radio Regulation ("RR") 2613; the Voluntary Group of Experts ("VGE") Report; the preliminary agendas for WRC-97 and WRC-99; and the Commission's conference preparatory processes.

Fixed Satellite Use of the Band 13.75 - 14.0 GHz

In its Second Notice, the Commission reviews the action taken to allocate the 13.75 - 14.0 GHz band to the FSS on a primary basis at WARC-92 and the subsequent studies carried out by ITU-R Task Groups 4/4 and 7/3, confirming the sharing criteria in Footnotes Nos. 855A and 855B of the Radio Regulations.² These studies were conducted in response to Resolution 112 (WARC-92) calling for the review of the criteria specified in RR 855A and for studies on the technical compatibility between FSS and secondary allocations to the space research and earth exploration-satellite services in

¹ CWS will discuss herein only those issues of direct concern to the Fixed Satellite Service (FSS). See Comments of COMSAT Mobile Communications, filed March 6, 1995, in this proceeding for an in-depth response to the MSS issues including the feeder link issue that concerns both MSS and FSS services. CWS will also address the feeder link issue as it relates to certain FSS bands.

the 13.75 - 14.0 GHz band. The Commission specifically invited comments on RR 855B, which stipulates that after January 1, 2000 non-geostationary space stations in the space research and earth exploration-satellite service will operate on a secondary basis relative to the FSS service.³

CWS supports the Commission's Draft Proposal No. 4/SS to amend Article 8 of the Radio Regulations to include in RR 855A a reference to Recommendation ITU-R S.1068, concerning the sharing of the FSS with the radiolocation and radionavigation services; and to include in RR 855B a reference to Recommendations ITU-R S.1069 and ITU-R SA.1071 concerning protection criteria and compatibility between the FSS and the secondary services in the space research and earth exploration-satellite services. Also, the Commission's proposal to suppress Resolution 112 (WARC-92) should be generally supported at WRC-95, since the above-referenced Recommendations are based on the studies called for in the Resolution and these Recommendations have been adopted by the ITU-R. Therefore, the requirements of Resolution 112 have been met; and, with the modifications to Nos. 855A and 855B at WRC-95, Resolution 112 is no longer required.

The allocation of the 13.75 - 14.0 GHz band at WARC-92 to the FSS and the work that has been concluded on the sharing criteria since WARC-92 represents the cooperative efforts of all the affected parties within the United States and at the international level. Based on these achievements, we fully expect that the Commission's

² See Second Notice at paras. 71 - 75.

³ See id. at para. 75.

proposal as now drafted will be consistent with the general positions of other administrations at WRC-95. Therefore, reaching agreement on this issue should be straightforward and consume little conference time.

Mobile Satellite Feeder Links and RR 2613

The Second Notice seeks comments on three aspects surrounding the question of feeder link bands for MSS systems operating in non-geostationary orbit (NGSO). One aspect concerns the interpretation and application of existing RR 2613, which seeks to protect GSO FSS systems from unacceptable interference caused by space radiocommunication services using NGSO systems; another concerns spectrum requirements and the amount of spectrum needed to be allocated in order to satisfy the demand for feeder links; and a third relates to identifying the specific bands to be allocated at WRC-95 as feeder links for MSS systems.⁴ CWS generally agrees with the feeder link proposals contained in the Preliminary FCC Draft Proposal No. 1/FL-MSS (FCC Draft Proposal). Our specific exceptions and concerns on the FCC Draft Proposal are discussed below. Considerable work has been done by the ITU-R and the IAC IWG-4 to lay the basis for WRC-95 to make sufficient spectrum available for NGSO MSS feeder links, and the Commissions proposal reflects this effort.

CWS's specific comments are intended to support the Commission's decision not to include the band 13.75 - 14.0 GHz in the FCC Draft Proposal as a feeder link. We discuss the application of RR 2613 and also raise concern about the amount of spectrum at

⁴ See Second Notice at para. 45 - 55.

20/30 GHz now available to GSO FSS that could be lost to feeder links and to other services.

Given the fact that the band 13.75 - 14.0 GHz band was only recently allocated to FSS at WARC-92 and that the sharing studies have just been completed and recommendations adopted within the ITU-R for the five services that will share this band, we believe this band should not be a candidate band for MSS feeder links. Indeed, the Commission does not propose this band as a MSS feeder link band in the Second Notice. However, we are still concerned because the 13.75 - 14.0 GHz band appears in the international table of candidate bands which was developed by ITU-R TG 4/5. We believe that the Commission should develop a strategy for deleting this band from further international consideration for NGSO MSS feeder links.

The Interim Report of the IAC IWG-4 on feeder links essentially adopted the TG 4/5 Table of candidate bands, but it is our understanding that IWG-4 has recently decided not to include the 13.75 - 14.0 GHz band in its final report to the Commission because of constraints such use would place on the newly allocated FSS and the other existing services in the band. Moreover, it would appear from the ITU's Space Network List that a large number of GSO FSS systems are proposing to use this band, thus, it could well become a heavily used FSS band globally.

Regarding RR 2613, we are keenly aware of the difficulties and ambiguities that surfaced in TG 4/5 and that the sensitivities surrounding this issue run high. Considerable time was spent in arriving at NGSO MSS feeder link solutions which would not require the application of RR 2613. For frequency bands below 20/30 GHz, the primary solution

was to recommend reverse direction transmission for NGSO MSS feeder links, thereby obviating the need for RR 2613. This same solution apparently has been proposed by the Commission in the Second Notice.

We support this approach for bands below 20 GHz. However, for the 30 GHz band, reverse direction transmission operation is not possible for various reasons. In this case the TG 4/5 solution was not to apply RR 2613 in certain FSS bands. CWS agrees that this is the most effective solution to the problem. However, we are concerned that too much of the 20/30 GHz FSS allocation may be pre-empted for NGSO MSS feeder links and other services. This concern is prompted both by the Commission's Note 12 to the Table on page 29 of the Second Notice relating to the 29.0 - 29.5 GHz band, and by footnote 74 in the Second Notice referring to Teledesic Corporation's proposal to modify the application of RR 2613 so that NGSO systems providing FSS receive equal priority in the FSS bands. Note 12 reads in part that "... the Commission is engaged in other rulemaking proceedings that could affect the availability of the 29.0 - 29.5 MHz band for feeder links. Therefore, we request comment on both the 29.0 -29.5 GHz and alternate 500 MHz segments within the 27.5 - 29.5 GHz range for pairing with the 19.2 - 19.7 GHz band. We include the 29.0 - 29.5 MHz band as an example '500 MHz' proposal."

CWS understands that sharing studies conducted in the "other rulemaking proceedings" referred to by the Commission show that the other proposed use of the 27.5 - 29.5 GHz band for local multi-point distribution service is not compatible with FSS. Moreover, the amount of spectrum being requested by Teledesic at 30 GHz is very large and could consume half or more of the total allocation. Depending upon the Commission's actions in these proceedings, the intended use of the 20/30 GHz bands for

GSO FSS could be seriously jeopardized. Also, it should be pointed-out that once the provisions of RR 2613 are no longer applicable to a given band, no protection would be afforded to the GSO FSS operations from either NGSO MSS feeder links or from NGSO FSS operations.

Therefore, the Teledesic proposed use raises a much broader issue than just allocating spectrum for NGSO MSS feeder links. It raises the issue of how GSO FSS and NGSO FSS systems could use the same allocation. Detailed studies, which have not yet been conducted, would be required before any conclusions could be reached on the feasibility of sharing between GSO and NGSO FSS systems. Band segmentation may be necessary if sharing is not feasible. This of course is not an issue in the Second Notice, nor is it on the WRC-95 agenda. While these issues may need to be addressed in detail, we do not believe that the Commission is proposing to treat them in the instant proceeding.

This being the case, we believe that the Commission should limit its consideration to the amount of spectrum needed at 20/30 GHz for feeder links for NGSO MSS use. In this regard, it would appear that a 200 MHz paired allocation at 20/30 GHz would be sufficient at WRC-95. Further consideration could be given to the related spectrum issues in the other proceedings referred to by the Commission in Note 12 and in footnote 74 in the Second Notice with the possibility of taking additional action at WRC-97 based on the outcome of WRC-95 and the other proceedings. We believe the amount of 200 MHz at the 20/30 GHz bands is supported by the estimates made by the IAC and reflected in Table 1 on page 24 of the Second Notice. The IAC estimates of the spectrum requirements for several frequency bands in the 4 to 31 GHz range indicate that 200 MHz would be sufficient under the stated conditions for the Table and assuming that sharing

among NGSO MSS systems is possible. According to recent work by the IAC in preparation for the Conference Preparatory Meeting (CPM) scheduled for later in March in Geneva, sharing of feeder links bands by NGSO MSS systems is feasible. This comprehensive study is contained in USA CPM DOC. No. 27 and is based on the actual parameters of the NGSO MSS systems filed with the Commission. In fact, this study shows that sharing is feasible across the full range of spectrum and becomes easier at the higher 20/30 GHz bands.

As a final note concerning feeder links, we are unsure of the origin and intended use of Table 2 "Candidate Bands for NGSO MSS Feeder Link Spectrum" on page 27 of the Second Notice. There are several differences between Table 2 and the final output from TG 4/5 and from the IAC IWG-4. Moreover, Table 2 is different from the FCC Draft Proposal in Appendix 1 to the Second Notice. It should be noted, however, that all of the feeder link proposals in Appendix 1 are also included in the TG 4/5 final report and in the IAC Interim Report. We suggest that the Commission delete Table 2 in the Second Notice and consider only those bands in the FCC Draft Proposal in Appendix 1 and those in the final report of the IAC IWG-4 on feeder links to be submitted to the Commission at a later day.

Review of the Final Report of the VGE at WRC-95

The first item on the agenda for the WRC-95 Conference is consideration of the Final Report of the Voluntary Group of Experts (VGE) who have worked since 1990 to simplify the Radio Regulations, including the Table of Frequency Allocations. In the

Second Notice, the Commission notes the concerns expressed by CWS and others about the possibility that the VGE agenda item could consume the resources and time available to the Conference and unduly distract from the MSS issues which should have priority and must be resolved at WRC-95.⁵ The Commission expressed similar concerns whether adequate attention can be devoted at WRC-95 for considering issues other than the simplification of the Radio Regulations.⁶

Several comments on the Commission's first Notice in this proceeding, including those of CWS, suggested that the VGE Report be considered in a committee separate from the committee that considers the MSS issues at WRC-95. We note that since filing those comments, the U.S. submitted a proposal to the ITU-R Radiocommunication Advisory Group (RAG) in January 1995, concerning the structure of the WRC-95 Conference. The U.S. Proposal would create two separate committees at WRC-95. One committee would address the VGE Report and the other committee would consider the MSS issues. This proposal was adopted at the RAG and is therefore a recommendation from the RAG to the Conference. Nevertheless, the Conference itself will determine the structure under which it will carry out its work and it is important that the U.S. gain broad support for this proposal to enable it to be adopted at WRC-95. This, of course, is no guarantee of an efficiently conducted conference, but it will permit parallel consideration of these issues with less likelihood that the MSS issues will be deferred due to the vast amount of time needed to address the full scope of the simplified Radio Regulations.

⁵ See Second Notice at para. 80.

⁶ Id.

We made another suggestion in our comments on the first Notice which we continue to think would be appropriate for WRC-95. That is, the Conference should place a limit on the amount of time that can be devoted to any one aspect of the simplified Radio Regulations at the Plenary Sessions of the Conference. This is necessary even in view of the two parallel committees, since all action matters must be considered in Plenary. Moreover, there is a real danger that the VGE issues could consume much of the conference's time, if the debate is not limited in some way. WRC-97 and, if required, WRC-99 could consider VGE issues that cannot be readily agreed to at WRC-95. Clearly, it would not be possible to postpone the key MSS issues without causing major harm to the implementation of new MSS satellite technology.

CWS continues to support the objectives of the VGE to simplify the Radio Regulations and we note that much valuable work to review the VGE Report has been done by the Informal Working Group 1 ("IWG-1") of the Commission's Industry Advisory Committee ("IAC") for WRC-95, as reflected in the December 30, 1994 Interim Report of the IAC. Also, having early access to the work done by the government in reviewing the VGE Report and the release by NTIA in October 1994 of the drafts developed by the Radio Conference Subcommittee (RCS) of the Interdepartment Radio Advisory Committee (IRAC) in the document containing the initial government recommended proposals for WRC-95, has been extremely useful to the private sector. Simplifying the Radio Regulations is an involved activity, to say the least, requiring considerable time to assess and understand the complexities. While we agree generally with the analysis of the VGE Report thus far conducted by the IWG-1, the cooperative effort between industry and government experts must continue to address these issues. How the new Rules of Procedures (ROPs) now being drafted in the ITU-R Radiocommunication Bureau relate

to the Simplified Radio Regulations and what the relationship may be between the current review of the ITU's frequency coordination and planning framework for satellite networks within the ITU-R, in response to the 1994 Kyoto Plenipotentiary Resolution COM 4/10 and the Simplified Radio Regulations, are additional matters that should be addressed. We also encourage the Commission to give continued attention as to how the VGE Report should be presented and dealt with at the Conference. Developing the strategy of the best means of dealing with the volume and complexities of the Simplified Radio Regulations may prove critical.

WRC-97 Agenda and WRC-99 Preliminary Agenda

WRC-95 will set the agenda for the WRC-97 Conference subject to ITU Council action at its 1996 Session. Therefore, it is necessary for the U.S. to develop a final proposal for the WRC-97 agenda. Also, a preliminary agenda for WRC-99 will be developed at WRC-95 to be finalized at WRC-97.

As discussed in our Comments and Reply Comments, CWS believes that the priority items for the WRC-97 Conference will be the WRC-95 agenda items that could not be completed and will require actions at WRC-97. We expect that WRC-95 will allocate some MSS feeder link bands, but other bands may need to be considered in 1997. In view of the complexities of the VGE Report and the Simplified Radio Regulations, it would be reasonable to expect that some of these issues will be postponed until WRC-97. Further, any new allocations for MSS are not likely to be adopted at WRC-95, since the necessary groundwork has not been accomplished to reach agreement. Therefore, it is important to establish at WRC-95 the need for additional MSS spectrum and to identify candidate

bands, so that necessary consideration of these bands can go forward in the ITU-R. Including the consideration of new MSS allocations firmly on the agenda for WRC-97 would be a major accomplishment in our view.

The other issue that we believe is a priority for the 1997 Conference concerns simplifying the process for bringing into use multi-band and/or multi-service satellite networks in the geostationary orbit with different classes of user terminals. An example would be the use of shipboard earth stations operating in FSS bands. This issue is related to Recommendation 715 (WARC ORB-88) which is already on the preliminary agenda for WRC-97.⁷

As noted in the Second Notice, we also agree with Teledesic's proposal that Recommendation No. 719 (WARC-92), concerning multi-service satellite networks using GSO, be included on the WRC-97 agenda and be associated with consideration of Recommendation 715 (WARC ORB-88). We believe that this is an important issue that is ripe for consideration now and we note that it is directly related to the Kyoto-94 Plenipotentiary Resolution COM 4/10 and resolves 1 which call for a review of some important issues concerning international satellite network coordination. These issues include the need for the ITU's frequency coordination and planning framework for satellite networks to continue to be relevant to rapidly advancing technological possibilities in order, for example, to facilitate the establishment of multi-service satellite systems. We continue to urge the Commission to support this issue as a priority for the WRC-97 Conference.

⁷ See Second Notice at para. 93.

Finally, regarding the preliminary agenda for WRC-99, we suggest that at the WRC-95 Conference the agenda topics for the 1997 Conference be prioritized and that those in the lower half be moved to the agenda for 1999.

Commission's Conference Preparatory Processes

In the Second Notice, the Commission reviews many of the suggestions it received in Comments on the first Notice, including several that were suggested by CWS.⁸ The Commission received strong endorsement of the steps it proposed to take in the first Notice to improve the preparations for international conferences. Considering the cycle of WRCs every two years, there was strong support for a permanent (renewable) industry advisory committee that involves the private and public sectors directly with the government at the experts working level to address the many and often complex issues involving a broad range of interests. Also, the Commission agreed with the need to broaden the opportunity for public participation in the process of negotiating final U.S. Proposals among the Commission and other government agencies. However, the Second Notice left open all these suggestions for further consideration and asked for additional comments.

We commend the Commission for the efforts being made to address the frustrations encountered in the process and to take actions to improve preparations for these conferences that are vital to U.S. interests. We believe the steps the Commission is taking now with the creation of the new International Bureau will indeed be positive and will

⁸ See Second Notice at paras. 104 - 108.

improve the process. Exactly which suggestions the Commission intends to implement and how they might be implemented is not clear from the Second Notice, but we expect that the Commission will address the steps it plans to take after considering comments on the Second Notice. This being the case, we renew the six suggestions made in our Comments to the first Notice and specifically draw the Commission's attention to two of them.⁹ We believe special efforts should be made to increase the current liaison activity with the IRAC; to create a more open and regular coordination process between the Commission and NTIA for WRCs, including more joint work efforts between the IAC and the IRAC at the experts level; and to further more common development of U.S. Proposals. For example, the sharing of information and views on the VGE Report between the government experts and the private sector has proven invaluable in understanding the implications of the proposed changes in the Radio Regulations. Additionally, the release of the draft initial government recommended proposals by NTIA has been very useful to the private sector. These types of actions should become more formalized and made a part of the continuing preparatory processes.

Another suggestion involves coordination at the international level with other countries well in advance of the conference in an effort to develop common proposals for WRCs. This is easier said than done and would mean that the U.S. should be prepared to discuss all issues in an effort to jointly develop proposals before formal U.S. proposals are adopted. We note that efforts are already underway within CITEL and the Working Group on conference preparations to share views on conference issues. More attention should be given to this effort, particularly in view of the mandates from the Summit of the

⁹ See Comments filed by CWS on July 15, 1994 at 17 -18.

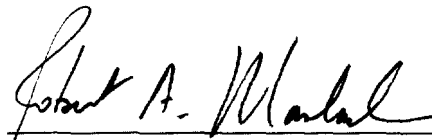
Americas held in Miami in December 1994, which called for several specific actions including actions to promote the compatible use of the radio spectrum in the Americas.

Conclusion

CWS believes that the comments and suggestions made herein in response to the Commission's Second Notice should be useful in formulating the U.S. Proposals to the 1995 WRC. We look forward to continuing to work with the Commission and the industry in the final preparations for the Conference.

Respectfully submitted,

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March 6, 1995

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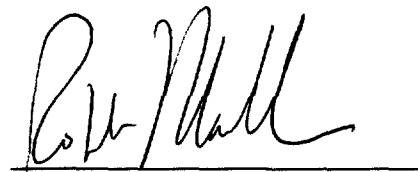
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